

REMARKS

This Amendment is filed in response to the Office Action mailed on October 20, 2006. All objections and rejections are respectfully traversed.

Claims 1-25 and 28-34 are currently pending.

Claims 16-25 are allowed.

Request for Interview

The Applicant respectfully requests a telephonic interview with the Examiner after the Examiner has had an opportunity to consider this Amendment, but before the issuance of the next Office Action. The Applicant may be reached at 617-951-3067.

Objections to Specifications

At page one of the Office Action, The Examiner objected to page one of the specification. Applicant has amended the specification to show serial numbers of related Applications. Applicant notes that these changes were presented to the examiner in the Amendment filed on November 28, 2005.

Claim Objections

At page two of the Office Action, the Examiner objected to the spelling of server in claim 8. Applicant has corrected the spelling and the correction should overcome the objection.

Claim Rejections – 35 USC § 102

At page two of the Office Action, claims 1, 9 10, and 13 were rejected under 35 U.S.C. §102 as being anticipated by Gross et al., US Patent No. 6,128,734, issued on Oct. 3, 2000, hereinafter Gross.

The present invention, as set forth in representative claim 1, comprises in part:

1. A method of transferring ownership of a volume comprising a plurality of disks from a source server to a destination server comprising the steps of:

changing ownership information stored in each of the plurality of disks to an un-owned state from a state of source server ownership; and changing ownership information stored in each of the plurality of disks to a state of destination server ownership from the un-owned state.

By way of background, Gross describes a computer system for use with upgrading an operating system by selecting and preparing a new boot device while the computer system is running and rebooting the computer system to load the upgrade. During rebooting, the system removes the original volume group, creates a new directory and adds the new volume group by removing the volume name (vg_name) and group file from the system.

Applicant respectfully urges that Gross do not teach nor suggest Applicant's claimed novel *changing ownership information stored in each of the plurality of disks to an un-owned state from a state of source server ownership and changing ownership information stored in each of the plurality of disks to a state of destination server ownership from the un-owned state*. In further detail, Applicant's claimed invention changes ownership information on each disk of the volume between three states, which are source

server ownership, un-owned state, and destination server ownership. By changing the ownership information on each disk of the volume, the disks can be transferred to a new server, for example, to balance the load between servers without having to ask permission. In addition, the source server changes the ownership information to the un-owned state and the destination server changes the ownership information from the un-owned state to the destination server owned state. The ownership change is applied to both a predetermined sector and a SCSI reservation on each disk. In contrast, Gross is changing the location of the volume name (*vg_name*) and not changing ownership information on the disks. Gross, in the HP technical documentation, states:

“The volume group identified by *vg_name* is removed from the */etc/lvmtab* file, and the associated device files including the *vg_name* directory and group file are removed from the system.” (Description section 2nd paragraph)

Gross merely discloses removing the volume name to move a volume and the disks follow. There is no disclosure of changing ownership information on each disk, as claimed by Applicant.

Accordingly, Applicant respectfully urges that Gross is legally insufficient to anticipate the present claims under 35 U.S.C. §102 because of the absence of the Applicant’s claimed novel *changing ownership information stored in each of the plurality of disks to an un-owned state from a state of source server ownership* and *changing ownership information stored in each of the plurality of disks to a state of destination server ownership from the un-owned state*.

Claim Rejections – 35 USC § 103

At page four of the Office Action, claims 2-3, 11-12, and 14-15 were rejected under 35 U.S.C. §103 as being unpatentable over Gross, in view of Brunelle et al., US Patent No. 6,654,902, hereinafter Brunelle.

Applicant respectfully notes that claims 2-3, 11-12, and 14-15 are dependent claims that depend from independent claims believed to be in condition for allowance. Accordingly, claims 2-3, 11-12, and 14-15 are believed to be in condition for allowance.

At page 6 of the Office Action, claims 4, 6, and 8 were rejected under 35 U.S.C. §103 as being unpatentable over Gross in view of Matsunami et al., US Patent Application Publication No. 2002/0099914, hereinafter Matsunami.

The present invention, as set forth in representative claim 4, comprises in part:

4. A method for transferring ownership of a volume having a plurality of disks, the method comprising the steps of:
 - sending a first message to a source server, the message containing a request for transferring ownership of a volume of disks;
 - receiving a response from the source server;
 - if the response contains abort information, aborting the transfer;
 - if not, verifying that the volume can be transferred;
 - if the volume can be transferred, sending a second message to the source server to perform the first part of a transfer process to transfer ownership from the source server to an un-owned state by changing ownership information on each disk of the plurality of disks;*
 - receiving a response from the source server after it performed the first part of the transfer process; and
 - in response to the step of receiving, performing a second part of the transfer process to transfer ownership from the un-owned state to a destination server by changing ownership information on each disk of the plurality of disks.*

By way of background, Matsunami describes a system for an administrator to organize logical units (LUs) into a pool area use with a storage system. For a volume to use the LUs in the pool area, the LU is set as used capacity of the pool area and the designated volume is set in the storage. The system uses a set of policies for organizing the volumes and the LUs.

Applicant respectfully urges that Gross or Matsunami, taken alone or in combination do not teach or suggest Applicant's claimed novel *if the volume can be transferred, sending a second message to the source server to perform the first part of a transfer process to transfer ownership from the source server to an un-owned state by changing ownership information on each disk of the plurality of disks, ... in response to the step of receiving, performing a second part of the transfer process to transfer ownership from the un-owned state to a destination server by changing ownership information on each disk of the plurality of disks*. In further detail, Applicant's claimed invention transfers ownership from a source server to an un-owned state, and then to the destination server by changing the both attributes of the ownership information. The ownership information includes a SCSI reservation and data stored in a predetermined sector of each disk. There is no disclosure in either Gross or Matsunami of changing ownership information on each disk to transfer ownership of the volume. Gross merely discloses removing the volume name (vg_name) from the server and the disks following the removed volume. Gross does not disclose changing ownership information written directly to the disks. Additionally, Matsunami does not add the missing disclosure of changing ownership information on the disks to move the volume.

Accordingly, Applicant respectfully urges that Gross and Matsunami, taken either singly or in combination, are legally insufficient to make obvious the present claims under 35 U.S.C §103 because of the absence of the Applicant's *if the volume can be trans-*

ferred, sending a second message to the source server to perform the first part of a transfer process to transfer ownership from the source server to an un-owned state by changing ownership information on each disk of the plurality of disks, ... in response to the step of receiving, performing a second part of the transfer process to transfer ownership from the un-owned state to a destination server by changing ownership information on each disk of the plurality of disks.

At page 9 of the Office Action, claims 5, 7, and 28-34 are rejected under 35 U.S.C. §103 as being unpatentable over Gross, in view of Matsunami, and in further view of Brunelle.

The present invention, as set forth in representative claim 31, comprises in part:

31. A method of transferring ownership of a volume comprising a plurality of disks from a source server to a destination server comprising the steps of:

verifying that the disks can be transferred in response to an initial request from a destination server; and
changing ownership information stored in each of the plurality of disks between three states including: a source server ownership state, an un-owned state, and a destination server ownership state.

By way of background, Brunelle discloses a way of using standard small computer system interface (SCSI) persistent reservations with I/O barriers. The American National Standards Institute (ANSI) has standardized a number of SCSI Persistent Reservation commands, such as *Persistent Reserve Out*. See col. 1, lines 28-41. Brunelle describes issuing two of these commands to assign ownership to storage devices. See col. 5, lines 60-67. The first *Persistent Reserve Out* command includes a key describing a particular node owning the device. See col. 6, lines 38-48. The second *Persistent Re-*

serve Out command includes a parameter specifying an access type, such as “write exclusive read only.” See col. 5, lines 65-67 and col. 6, lines 48-54. Additionally, Brunelle describes writing registration information each time a node is initialized or changed.

Applicant respectfully urges that Gross, Matsunami, nor Brunelle, taken alone or in any combination, do not teach nor suggest Applicant’s claimed novel *changing ownership information stored in each of the plurality of disks between three states including: a source server ownership state, an un-owned state, and a destination server ownership state*. In further detail, Applicant’s claimed invention transitions ownership information between three states by changing the SCSI reservation and predetermined sector on each disk so that the SCSI reservation and predetermined sector from a source server ownership, to un-owned state, and then to destination server owned state. Neither, Brunelle, Gross, nor Matsunami teach of changing ownership information on the disks to move a volume from a destination server to a source server. Gross merely teaches removing a volume name and importing the volume name within a directory at a new server, with the disks following the volume. Gross does not disclose nor suggest changing ownership information on each disk. Brunelle merely discloses using multiple SCSI reservations which are stored in a reservation table on each disk to show what privileges each network controller has for a disk. Brunelle does not disclose writing separately of the SCSI reservation to a predetermined area of the disk, as claimed by applicant. Additionally, Matsunami does not add the missing disclosure of changing ownership information on the disks to move the volume.

Accordingly, Applicant respectfully urges that Gross, Matsunami and Brunelle, taken either singly or in combination, are legally insufficient to make obvious the present claims under 35 U.S.C §103 because of the absence of the Applicant’s *changing owner-*

ship information stored in each of the plurality of disks between three states including: a source server ownership state, an un-owned state, and a destination server ownership state.

All independent claims are believed to be in condition for allowance.

All dependent claims are believed to be dependent from allowable independent claims.

The Applicant respectfully solicits favorable action.

Please charge any additional fee occasioned by this paper to our Deposit Account No. 03-1237.

Respectfully submitted,

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